

REMARKS

Claims 44 – 60 and 65 – 68 are pending in the present application. Claims 47, 49, 54, 55, and 58 have been amended. Non-elected claims 61-64 have been canceled. New claim 68 has been added.

Objections to the Specification:

The Examiner objects to the specification as failing to provide proper antecedent basis for the claimed subject matter of claims 47, 54, and 58. These claims have been amended to recite language consistent with the specification. The specification has been amended to correct typographical errors. No new matter has been added.

Rejections Under 35 U.S.C. § 112:

Claims 44 and 51 stand rejected under 35 U.S.C. § 112, second paragraph, because while claim 44 recited “an actuating member” and claim 51 recited “a head,” the specification recited “an actuating member or head.” Claim 51 has been amended to be consistent with claim 44 in this regard.

Claim 65 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Claim 65 has been amended to change the term “movable operative member” to “operative member.” The “operative member” recited in claim 65 corresponds to flap 4, which can move between a first closed position (shown in full lines in Figure 1) and a second fully open position (shown in chain-dotted lines in Figure 1).

In light of the foregoing amendments, applicant submits that the claims as amended comply with the requirements of 35 U.S.C. 112, and applicant respectfully requests that the rejection of claims 44, 51, and 65 be withdrawn.

Rejections Under 35 U.S.C. § 102(b):

Claims 44 – 58, 60, and 65 – 67 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Magill (U.S. 4,184,288). This rejection is respectfully traversed.

Claims 44 – 58

Applicant respectfully submits that the elements of claim 44 are not disclosed by Magill.

The present invention discloses a thermally-actuated mechanism which could be used, for example, as a fire damper for an airflow duct. An embodiment of the present invention includes a fire damper with an operative member or flap movable between several positions. The operative member is held open by a retention means, including a retention member with a thermally-actuated movable member. The movable member protrudes or protrudes further from the retention means when the retention means are closed. The movable member can also be used to activate a microswitch and trigger an alarm.

Magill discloses a fire damper that includes a fusible element (40) for holding open the damper. The present invention differs substantially from Magill as discussed below.

Claim 44 of the present invention specifies that the “retention member . . . can be secured by the action of the actuating member to retain the damper element in an open position.” The Examiner identifies fusible element (70) as the corresponding actuating member of the Magill invention. However, the fusible element (70) of Magill does not act to secure the retention member to retain the damper element in an open position. Applicant submits that the actuating pin (82) of Magill more closely corresponds to the actuating member of claim 44 of the present invention, because the actuating pin (82) of Magill acts to secure the retention member to retain the blades in an open position. See Magill, Col. 5, lines 58 to 61.

Furthermore, the Examiner asserts that the control box (36) and hole (84) of Magill correspond to the retention member of claim 44. However, claim 44 of the present invention specifies that the retention member is “fixed relative to the damper element.” The control box (36) and hole (84) of Magill do not meet this limitation because, as the damper element (20) rotates, the control box (36) does not move, and the hole (84) moves linearly.

Moreover, the Examiner asserts that the actuating pin (82) of Magill corresponds to the movable member of claim 44. Claim 44 recites that the movable member is “arranged such that it protrudes or protrudes further from an opening in the exterior of the body member when the actuating member moves to release the damper element.” The movable member of Magill, in contrast, is withdrawn into the body member. See Figures 9 – 11.

Claims 45 – 58 and 60 are dependent on claim 44, and are patentable over Magill for the same reasons discussed above. Further distinctions are discussed below.

Claim 45 recites that the “actuating member comprises a temperature-sensitive element for releasing the retention member.” The Examiner interprets the fusible element (70) of Magill as corresponding to the actuating member. As discussed above, the fusible element (70) of Magill does not act to secure the retention member to retain the damper element in an open position, and Applicant submits that the actuating pin (82) of Magill more closely corresponds to the actuating member of the present invention. Because the actuating pin (82) of Magill is not temperature sensitive, claim 45 of the present application is not anticipated by Magill.

Claim 50 of the present invention further limits the temperature-sensitive element as comprising “a heat-softenable or meltable material which when hard prevents movement of the movable member.” In contrast, the movable member of Magill (82) is not prevented from moving when the fusible element is hard. As seen in Figure 9 of Magill, the movable member (82) can be moved to the right by further compressing the spring at the inner end of the movable member (82). Therefore, claim 50 is not anticipated by Magill.

Regarding claim 51, the movable member (82) of Magill does not “move or protrude or protrude further through” an opening in the exterior of the body member when contacted by the head, as recited in claim 51. Rather, the movable member (82) of Magill retracts further into the springloaded plunger (86).

Regarding claim 52, the recess in Magill identified by the Examiner does not have “a detent engaging in the recess such that when the heat-softenable or meltable material is soft or molten, a force on the head in a direction of its movement with respect to the casing would cam the detent out of the recess in a direction generally at right angles to the

direction of movement of the head.” The force on the head element (70) of Magill does not cam the detent out of the recess identified by the Examiner, but rather the head element remains fully attached in relation to the recess when the heat-softenable or meltable material is soft or molten.

Regarding claim 55, the actuating member of Magill (actuating pin 82) does not “press the retention member [hole 84] against the backing piece [either inner frame 12 or sealing strip 64].” Rather, in Magill, the force on the actuating pin 82 is directionally away from the inner frame 12 and the sealing strip 64, as illustrated in Figure 3 and Figures 9 through 11.

Regarding claim 56, the inner frame 12 of Magill is not a sprung piece (as recited in Claim 56) and does not act as an engaging member as recited in claim 56.

With regard to claim 58, Applicant disagrees that “the retention member [of Magill] has a number of recesses (84) or cutouts for engagement directly or indirectly by the actuating member to provide a number of different open positions of the damper element, of various degrees of opening” Magill discloses only a single recess (hole 84) in the operating member 72. Further, the portion of Magill cited by the Examiner limits the damper to a single open position, with the damper blades being held only “fully open through the automatic engagement of the spring-loaded actuating pin 82 of the cartridge 68 in a hole 84 in the operating member.” (Magill, Col. 5, lines 55 to 61).

Claims 65 – 67:

Claim 65 is not anticipated by Magill because the movable member of Magill does not “protrude[] or protrude[] further through the opening” of the body. Rather, the

movable member of Magill 82 is withdrawn into the body member. See Magill, Figures 9 – 11.

Regarding claim 66, the retention member (hole 84) of Magill is not fixed relative to the damper element, as discussed above with respect to claim 44. Rather, as the damper element (20) rotates, the hole moves linearly.

Additionally, Magill does not disclose “a support member fixed to the circumferential wall of the ducting and supporting at least part of the retention means . . .,” as required by claim 66. The Examiner identifies the cover plate 38a of Magill as meeting this element. Rather than supporting at least part of the retention means, however, the cover plate 38a of Magill covers the control box 36 by means of the removable cover 38 (see Col. 3, line 35).

Furthermore, claim 66 specifies that the support member has “at least a first limb . . . which limb is adjacent the inner circumferential wall of the ducting.” The Examiner identifies the flanges 100 of the cover plate 38a in Magill as constituting said at least first limb. In Magill, however, the cover plate 38a with its flanges 100 is placed on the outer circumferential wall of the ducting, as illustrated in Magill, Figure 16. Claim 66 of the present invention further specifies that said limb has “a notch on its open end.” The Examiner identifies the holes in element 38 of Magill as corresponding to this notch. Office Action, page 8. However, these holes are in the cover plate (element 38) of Magill, not in the flanges 100, previously identified by the Examiner as corresponding to the limb of claim 66 of the present invention.

Claim 66 also includes "securing means securing the limb to the inner circumferential wall of the ducting at a position between the axle and the base of the support member." This element is not disclosed by Magill. The Examiner identifies the screw holes 102 of Magill as such securing means. Office Action, page 8. As illustrated in Figure 16 of Magill, however, the screw holes 102 secure the flanges 100 to the outer circumferential wall of the ducting, not the inner circumferential wall as required by claim 66. Figure 16 of Magill also illustrates that the screw holes 102 are not located "at a position between the axle and the base of the support member," as required by claim 66.

Regarding claim 67, this claim depends from claim 55, and is patentable over Magill for at least for the reasons given above. Claim 67 is also distinguishable over Magill because Magill does not disclose a "sprung piece . . . which . . . is pressed against the retention member by the actuating member when the damper flap is retained in an open position, whereby when the damper flap is retained in an open position, the actuating member presses the sprung piece against the retention member which in turn is pressed against the backing piece." As addressed above with regard to claim 56, the Examiner's interpretation of the inner frame 12 of Magill as corresponding to the claimed sprung piece is respectfully traversed. Furthermore, the actuating member 82 of Magill does not press the retention member 84 against either the inner frame 12 or the sealing strip 64.

Because Magill does not disclose all of the limitations of claims 44 – 58, 60, and 65–67 of the present invention, these claims are not anticipated by Magill. Applicant respectfully requests that the 35 U.S.C. § 102(b) rejection of claims 44 – 58, 60, and 65 – 67 be withdrawn.

Rejections Under § 103(a):

Claim 59 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Magill (U.S. 4,184,288) in view of Nailor (U.S. 5,779,540). This rejection is respectfully traversed.

In order to establish a *prima facie* case of obviousness “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” M.P.E.P. §2142. Neither Magill nor Nailor, even when considered in combination, teach or suggest all of the limitations of claim 59.

Claim 59 depends from claim 44, and recites that “the protruding end portion of the movable member actuates a microswitch.” The novel features of the invention recited in independent claim 44 has been addressed above. Regarding dependent claim 59, Applicant respectfully submits that Magill and Nailor, even when combined, do not teach or suggest to employ the protruding end portion of the movable member of the damper of claim 44 to activate a microswitch. To the contrary, Magill teaches a movable member 82 which is *withdrawn into* the cartridge element 68. See Figures 9 – 11. Applicant respectfully submits that Magill does not and could not disclose, teach, or suggest the use of a protruding end of a movable member to activate a microswitch, as required by claim 59.

Further, Nailor instructs the use of a microswitch which is triggered by the rotation of the damper blades. Claim 59 of the present invention uses the movable member of the retention means to trigger a microswitch.

Since Magill and Nailor do not individually or collectively teach or suggest all of the limitations of claim 59, the claim is not obvious over the cited combination.


Accordingly, Applicant respectfully requests that the rejection of claim 59 under 35 U.S.C. § 103(a) be withdrawn and the claim allowed.

Conclusion

For the reasons discussed above, Applicant respectfully submits that all pending claims are in condition for allowance, and such action is earnestly solicited.

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Respectfully submitted,

By 

Stephen A. Soffen

Registration No.: 31,063

DICKSTEIN SHAPIRO LLP

1825 Eye Street, NW

Washington, DC 20006-5403

(202) 420-2200

Attorney for Applicant